

Amendment Under 37 CFR 1.111
Application No. 10/684,858
Docket No. 012003-03

REMARKS/ARGUMENTS

The Office Action mailed June 28, 2004 has been studied. The allowance of claims 20-22, 26-29 and 32-35 is noted and is appreciated. The title of the application has been changed to more accurately reflect the subject matter of the pending claims. Claim 20 has been amended to correct a spelling error and delete the phrase "fan-shaped," while claims 23 and 26 have been amended to provide proper antecedent support in subparagraph (c). New claim 37 has been added to the application and is supported by original claims 1 and 3.

The Drawing Objection

The drawings were objected to under 37 CFR 1.83(a) on the grounds that they must show every feature of the invention specified in the claims. In support of this objection, the Examiner argues that the fan-shaped jet must either be shown or the feature cancelled from the claims. Applicants have cancelled claim 2 from the application and deleted the phrase "fan-shaped" from claim 20. Since there are no remaining claims that recite the shape of the jet, these amendments should overcome the Examiner's objection.

The 35 USC 102 Rejection

Claims 1, 2, 23 and 24 in the application were rejected under 35 USC 102(b) as being anticipated by Bucklishch (U.S. Patent 3,736,875). This rejection is respectfully traversed for the reasons discussed below.

In order for a reference to negate the novelty of or anticipate a claimed invention under 35 USC 102, the reference must identically disclose or describe the claimed invention. All material elements recited in the claims must be found in the prior art reference. Jamesbury Corp. v. Litton Industrial Products, Inc. 225 USPQ 253 (Fed. Cir. 1985); Kalman v. Kimberly Clark Corp. 218 USPQ 781 (Fed. Cir. 1983); In re

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Marshall 198 USPQ 344 (CCPA 1978). The absence from the reference of any claimed element negates anticipation.
Kloster Speedsteel AB v. Crucible Inc. 230 USPQ 81, 84 (Fed. Cir. 1986).

Claims 1 and 19

In support of the rejection of independent claim 1, the Examiner takes the position that Bucklishch discloses the method of "placing a device comprising case [sic] having a hollow interior defined by side walls, a closed back end (8); an open front end (2); two passage ways (6); a liner (3); a main charge (1); a booster explosive (6) communicating with main [sic] charge at two or more points (9) [sic]." This rejection is respectfully traversed for the reason set forth below.

The Bucklishch patent describes explosive charges for use in blasting. The only reference to the use of the disclosed charges is in column 1 at lines 9-11 where it is taught that the disclosed devices are "blasting charges . . . exhibiting a recess on the side thereof facing the object to be blasted" There is no mention of specific uses for these charges in the patent. Thus, the Bucklishch patent clearly fails to teach several elements or steps required by Applicants' claim 1, i.e., (1) placing the recited non-linear shaped charge perforator in a wellbore surrounded by a hydrocarbon-bearing formation, (2) subsequently detonating the charge to produce a jet that penetrates the hydrocarbon-bearing formation and (3) forming non-circular perforations in the formation. Under the case law discussed above, the failure of Bucklishch to teach these steps and elements prevents the patent from anticipating independent claim 1 and its dependent claim 19.

Claims 23 and 24

In support of the rejection of independent claim 23 under 35 USC 102(b), the Examiner argues that Bucklishch discloses a device comprising a hollow interior defined by side walls, a closed back end 8, an open front end 2, two passage ways 6, a liner 3, a main charge 1, and a booster explosive 6 communicating with the main charge at two or more points 9. This rejection, like the previous 35 USC 102(b) rejection, is traversed.

Contrary to what the Examiner argues, the Bucklishch patent fails to teach a case that has at least two passageways contained within its closed back end or its side walls. The Examiner evidently believes that reference numeral 6 in the Bucklishch drawing represents two passageways. It is respectfully submitted this not the case. Reference numeral 6 is defined by Bucklishch in column 2 at lines 29-30 as a conical propagation charge. This charge is used to initiate explosive charge 1 in a continuous annular fashion. Thus, the passageway that contains the conical propagation charge 6 is a single continuous conical passageway that forms the annular initiation ring and does not satisfy the requirement of claim 23 that there are at least two passageways. Furthermore, Bucklishch fails to teach that the two passageways are contained in the closed back end or walls of the case or jacket 7 as is also required by claim 23. Instead, Bucklishch shows that the passageway filled with conical propagation charge 6 is located between the conical inert component 8 and the closed back end of the jacket 7. Since the Bucklishch patent fails to teach at least two elements of Applicants' claim 23, it does not anticipate the claim.

In rejecting claim 24, the Examiner contends that Bucklishch discloses a device devoid of wave shapers, deflectors, inner cases and mechanical inserts. A wave shaper is an insert of inert material used for changing the shape of a detonation wave. It is respectfully submitted that conical

inert component 8 taught by Bucklishch is just such a device because it shapes the detonation wave passing through main explosive charge 1. Thus, claim 24, which requires the shaped charge perforator of independent claim 23 to be devoid of a wave shaper, recites another element in addition to those recited in claim 23 that is not taught by Bucklishch, and therefore claim 24 clearly is not anticipated by Bucklishch.

The 35 USC 103 Rejection

Claims 30 and 31 in the application were rejected under 35 USC 103(a) as being unpatentable over Bucklishch. In support of this rejection, the Examiner argues that it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a plurality of charges because it has been held that a mere duplication of essential working parts of a device involves only routine skill in the art. This rejection is respectfully traversed.

Claims 30 and 31 in the application are drawn to perforating guns comprising a plurality of the shaped charge perforators of claim 23. A perforating gun is a device that is lowered into an oil and gas well and used to make holes in the well casing and channels in the surrounding hydrocarbon-bearing formations so that oil and gas can flow through the channels and holes into the wellbore and then to the surface of the well. The Bucklishch patent not only fails to teach or suggests any kind of perforating gun it nowhere mentions wells or underground hydrocarbon-bearing formations. Absent such teachings the patent utterly fails to render claims 30 and 31 obvious to one having ordinary skill in the art. It is not apparent how a patent that nowhere mentions or describes any kind of perforating gun can be at all relevant to claims directed to such a device.

Even assuming for the sake of argument that a perforating gun was suggested by Bucklishch, the patent still would not render claims 30 and 31 obvious because these claims

require the presence in the perforating gun of a plurality of the shaped charge perforators recited in claim 23, and it is submitted that these perforators themselves are non-obvious to one having ordinary skill in the art over the blasting charges taught by Bucklishch. Claim 23 requires the shaped charge perforator to have at least two passageways contained in the closed back end or side walls of its case. The Bucklishch patent teaches only one continuous passageway that is not contained in the closed back end of the case. Thus, the patent fails to render the shaped charge perforator of claim 23 obvious and therefore cannot render the perforating guns of claims 30 and 31, which claims require the presence of a plurality of these perforators, obvious to one having ordinary skill in the art.

The New Claim

New claims 37 is drawn to a method for perforating hydrocarbon-bearing formations surrounding a wellbore by placing a non-linear shaped charge perforator in the wellbore and detonating the perforator by initiating its main explosive charge at at least two points that are between about 165° and about 195° apart. The Bucklishch patent nowhere suggests placing a non-linear shaped charge perforator in a wellbore or detonating the perforator by initiating its main explosive charge at two points 165° and 195° apart to form a jet that penetrates the hydrocarbon-bearing formation surrounding the wellbore. Thus, Bucklishch neither anticipates claim 37 nor renders it obvious to one having ordinary skill in the art.

The Information Disclosure Statement

An "Information Disclosure Statement Under 37 CFR 1.97 and 1.98" was filed by Applicants with the instant application on October 14, 2003 identifying nine patents and two papers. A Form 1449 listing these disclosures was attached to the disclosure statement. The Examiner returned

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with his Office Action dated June 28, 2004 a copy of the Form 1449 on which he initialed the nine patents, thereby indicating that he had considered them. However, the two papers listed as Items AR and AS were not initialed by the Examiner. It is assumed that this was an oversight by the Examiner and that he has indeed considered these disclosures. Thus, it is respectfully requested that the Examiner indicate he has considered these disclosures by placing his initials to the left of their listings on the Form 1449 and returning another copy of the form to the Applicants with his next communication in this case.

Conclusion

In view of the foregoing, it is submitted that the now-pending claims are patentable over the Bucklishch patent. Thus, it is respectfully requested that the Examiner withdraw the rejections and pass the application to issue.

Respectfully submitted,



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